

REMARKS/ARGUMENTS

Claims 19-22 stand allowed.

Objected to Claims 9, 14 and 16-18 have been rewritten in independent form including all of the limitations of the base claim and any intervening claims and are therefore allowable. Accordingly, claims 9, 14 and 16-18 stand allowable.

Claims 1-8, 10-13 and 15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ciccarelli et al. (U.S. Patent No. 6,498,926). Applicants respectfully traverse this rejection, as set forth below.

Independent Claim 1 requires and positively recites, a communications receiver, comprising: "a low noise amplifier (LNA) for amplifying a received signal so as to generate an LNA output signal, said LNA **having M gain setting modes of operation, the gain of said LNA determined in response to an LNA gain control command**", "a mixer for multiplying said LNA output signal with a local oscillator signal so as to generate a mixer output signal, **said mixer having N gain setting modes of operation, the gain of said mixer determined in response to a mixer gain control signal command**", "a detector for recovering, from said mixer output signal, information originally transmitted" and "a **controller operative to generate said gain control command to said LNA and said mixer gain control command to said mixer, said controller adapted to set the gain setting of said LNA and of said mixer to one of a plurality of gain states, wherein each gain state consists of a unique combination of LNA gain setting and mixer gain setting**".

Independent Claim 10 requires and positively recites, a communications receiver, comprising: "a low noise amplifier (LNA) for amplifying a received signal so as to generate an LNA output signal, **said LNA having a low gain and a high gain mode of operation, the gain of said LNA determined in response to an LNA gain control command**", "a mixer for multiplying said LNA output signal with a local oscillator signal so as to generate a mixer output signal, **said mixer having a low gain and a high gain mode of operation, the gain of said mixer determined in response to a mixer gain control command**", "a detector for recovering, from said mixer output signal, information originally transmitted" and "a **controller operative to generate said LNA gain control command and said mixer gain control command, said controller adapted to set the gain setting of said LNA and of said mixer to one of four gain states, wherein each gain state consists of a unique combination of LNA gain setting and mixer gain setting**".

In contrast, Ciccarelli et al. discloses a programmable linear receiver having fixed gain LNAs (col. 7, lines 51-52 & col. 13, lines 8-9). The Examiner admits that Ciccarelli et al. does not disclose controlling the gain of the LNA and mixer (Office Action, page 3, lines 15-16). Ciccarelli, which does disclose IIP3, does NOT teach adjusting the gain of the devices. The Examiner, however, argues that, in order to adjust the IIP3, the amplitude of the signal must be adjusted by adjusting the gain of the devices of the receiver. Applicants respectfully respond that such supposition by the Examiner is not supported by fact. Ciccarelli discloses adjusting the IIP3, but nowhere does it further suggest that the amplitude of the signal must be adjusted by adjusting the gain of the LNA of the receiver. Applicants respectfully submit that the Examiner has not established a prima facie case of obviousness concerning Claims 1 and 10.

Regarding 35 U.S.C. 103 rejections, in proceedings before the Patent and Trademark Office, "the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art". In re Fritch, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (citing In re Piasecki, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984). "The Examiner can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally

available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references", In re Fritch, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992)(citing In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988)(citing In re Lalu, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1988)).

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest ALL the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). The Examiner has not presented any evidence that suggests that these three requirements have been met in his determination that Claims 1 and 10 are obvious over Ciccarelli.

Furthermore, Applicants respectfully point out that "all words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Claims 6-8, 11-13 and 15 stand allowable as depending from allowable claims and including further limitations not taught or suggested by the references of record.

Claim 6 further defines the receiver according to claim 1, further comprising a band pass filter located before said LNA and adapted to filter the signal received from an antenna. Claim 6 stands allowable for the same reasons set forth above in support of the allowance of Claim 1.

Claim 7 further defines the receiver according to claim 1, further comprising a band pass filter located before said mixer and adapted to filter the LNA output signal before input to said mixer. Claim 7 stands allowable for the same reasons set forth above in support of the allowance of Claim 1.

Claim 8 further defines the receiver according to claim 1, further comprising a band pass filter located after said mixer and adapted to filter said mixer output. Claim 8 stands allowable for the same reasons set forth above in support of the allowance of Claim 1.

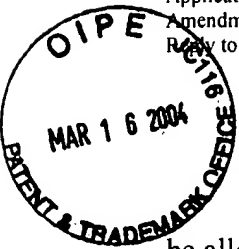
Claim 11 further defines the receiver according to claim 10, further comprising a band pass filter located before said LNA and adapted to filter the signal received from an antenna. Claim 11 stands allowable for the same reasons set forth above in support of the allowance of Claim 10.

Claim 12 further defines the receiver according to claim 10, further comprising a band pass filter located before said mixer and adapted to filter the LNA output signal before input to said mixer. Claim 12 stands allowable for the same reasons set forth above in support of the allowance of Claim 10.

Claim 13 further defines the receiver according to claim 10, further comprising a band pass filter located after said mixer and adapted to filter said mixer output. Claim 13 stands allowable for the same reasons set forth above in support of the allowance of Claim 10.

Claim 15 further defines the receiver according to claim 10, wherein said controller is operative to set the LNA to low gain mode and said mixer to low gain mode to achieve maximum linearity and maximum 3rd order intercept point. Claim 15 stands allowable for the same reasons set forth above in support of the allowance of Claim 10. Moreover, since Ciccarelli fails to teach or suggest setting the LNA to a low gain mode and said mixer to a low gain mode, it further fails to teach setting such gain modes to "achieve maximum linearity and maximum 3rd order intercept point", as further required by Claim 15.

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Amendment dated March 12, 2004
Reply to Office Action of October 27, 2003



Claims 19-22 stand allowed. Objected to Claims 9, 14, and 16-18 have been amended to be allowable. Claims 6-8, 10-13 and 15 stand allowable over the cited art. Applicants respectfully request allowance of the application at the earliest possible date.

Respectfully submitted,

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